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EXAMINER
NAHAR, QAMRUN

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/503,215	Applicant(s) NIEWIADOMSKI ET AL.
	Examiner Qamrun Nahar	Art Unit 2124

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 October 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26,28-33,36 and 41-47* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26,28-33,36 and 41-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4)☐ Interview Summary (PTO-413) Paper No(s). _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

1.   This action is in response to the RCE filed on 10/30/03.

2.   The objection to claim 22 is withdrawn in view of applicant's amendment.

3.   Claims 1, 15, 21-23, 28-31, 36 and 41 have amended.

4.   Claims 1-26, 28-33, 36 and 41-47 are pending.

5.   Claims 1-26, 28-33, 36 and 41-47 are rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the written description requirement.

6.   Claims 1-2, 4-16, 18-20, 28-33, 36 and 41-47 are rejected under 35 U.S.C. 102(b) as

being anticipated by Fortin (U.S. 5,528,753).

7.   Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fortin

(U.S. 5,528,753).

8.   Claims 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fortin (U.S.

5,528,753), and further in view of Peek (U.S. 5,481,706).

Response to Amendment

Claim Rejections - 35 USC § 112

9.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

10.   Claims 1-26, 28-33, 36 and 41-47 are rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to one skilled

in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 15, 21, 23, 28-31, 36 and 41 have been amended to substantially recite "the user-supplied function injecting a fault into the executable file". There is no support for this limitation in the specification as filed. From page 2, line 26 to page 3, line 1, there is only one sentence that states "In general, the invention enables an author of a computer program to easily inject a fault into an executable file." This sentence does not provide support for the limitation "the user-supplied function injecting a fault into the executable file". That is, this sentence does not specify that the *user-supplied function* injects a fault into the executable file. On page 3, lines 1-7 of the specification describe more specifically how the invention instruments an executable file. There is no mention of the user-supplied function injecting a fault into the executable file in the entire specification.

This limitation "the user-supplied function injecting a fault into the executable file" is interpreted as "injecting the user-supplied function into the executable file".

Claims 2-14, 16-20, 22, 24-26, 32-33 and 42-47 are rejected for dependency upon rejected parent claims.

Claim Rejections - 35 USC § 102

11.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12.   Claims 1-2, 4-16, 18-20, 28-33, 36 and 41-47 are rejected under 35 U.S.C. 102(b) as

being anticipated by Fortin (U.S. 5,528,753).

Per Claim 1 (Amended):

The Fortin patent discloses:

- a computerized method for creating an instrumented executable file ("provide a system

and method for efficiently instrumenting stripped object routines executing on a computer

system" in column 3, lines 19-21)

- modifying an executable file to invoke a user-supplied function in place of an original

function, injecting the user-supplied function into the executable file ("The Call to Target

still points to address 202. After 202, however, control is passed to Entry Routine 210. Entry

Routine 210 collects the information desired by the monitor and returns control to the target

routine." in column 4, lines 46-51)

- retaining access information of the original function, the access information enabling the

user-supplied function to invoke the original function ("The Call to Target still points to

address 202 ... returns control to the target routine." in column 4, lines 47-51).

Per Claim 2:

The Fortin patent discloses:

- **the user-supplied function is modified to invoke the original function using the retained access information of the original function** (column 4, lines 49-53).

Per Claim 4:

The Fortin patent discloses:

- **the user-supplied function is not exported during compilation** (column 5, lines 20-24).

Per Claim 5:

The Fortin patent discloses:

- **the original function and the user-supplied function have identical prototypes** (column 4, lines 62-65).

Per Claim 6:

The Fortin patent discloses:

- **the user-supplied function is stored in a module that is separate from the executable file** (column 5, lines 20-24).

Per Claim 7:

The Fortin patent discloses:

- **modifying the executable file is performed using user-specified set points** (column 4, lines 54-65).

Per Claim 8:

The Fortin patent discloses:

- **determining whether the original function implements the thiscall calling convention, and when the determination is positive, adding instructions to the executable file to perform pushing the register that holds the "this" pointer onto the stack from the invoked original function site when the determining indicates that the function implements a thiscall calling convention** (column 5, lines 48-51 and lines 55-57, and column 6, lines 48-58)

- **swapping the return value of the invoking original function on the stack and the register that holds the "this" pointer value on the stack when the determining indicates that the function implements a thiscall calling convention** (column 6, lines 59-67).

Per Claim 9:

The Fortin patent discloses:

- modifying the executable file further comprises enabling the user-supplied function to

invoke the original function in the executable file (column 4, lines 49-53).

Per Claim 10:

The Fortin patent discloses:

- adding a jump in the user-supplied function to a function that retrieves the address of the

original function (column 6, lines 6-18)

- adding a jump in the user-supplied function that invokes the original function using the

address of the original function (column 6, lines 1-5 and lines 35-39).

Per Claim 11:

The Fortin patent discloses:

- enabling the user-supplied function to alter behavior (column 4, lines 47-53).

Per Claim 12:

The Fortin patent discloses:

- enabling the user-supplied function to alter behavior is performed in response to data

(column 4, lines 47-53).

Per Claim 13:

The Fortin patent discloses:

- the data is retrieved from an initialization file ("libinstr.a" in Fig. 7 and column 5, lines 20-24).

Per Claim 14:

The Fortin patent discloses:

- saving the address of an original function in a threaded local storage variable (column 6, lines 1-5)

- creating an entry in a function lookup table associating the address of the original function with the name of the original function, wherein the function lookup table is in the instrumented executable file (column 5, lines 46-51 and lines 64-67).

Per Claim 15 (Amended):

The Fortin patent discloses:

- **a computerized method for executing an instrumented executable file** ("provide a system and method for efficiently instrumenting stripped object routines executing on a computer system" in column 3, lines 19-21)

- **modifying the instrumented executable file to invoke a user-supplied function in place of an original function, injecting the user-supplied function into the executable file, the user-supplied function having a jump to the original function** ("The Call to Target still points to address 202. After 202, however, control is passed to Entry Routine 210. Entry Routine 210 collects the information desired by the monitor and returns control to the target routine. ... The stored target routine first instruction is executed in the 'Return to Target' section and control branches to the second instruction of the target routine 714." in column 4, lines 46-51 and column 6, lines 56-58)

- **saving the address of the original function in a threaded local storage variable** ("The 'Return to Target Routine' section 604 contains the 'saved' first instruction of the target routine and direct branch to the address of the second instruction of the target routine." in column 6, lines 1-5)

- **invoking the user-supplied function using the address** ("Processing begins with a call to the target routine 702. This call will encounter the branch first instruction and immediately branch to the Entry section 704 ... that in turn calls 708 user supplied Entry routine" in column 6, lines 46-51).

Per Claim 16:

The Fortin patent discloses:

- creating a master lookup table at initialization wherein the master lookup table associates the base address of the instrumented executable file to the address of a function lookup table in the instrumented executable file (column 5, lines 47-51 and lines 55-67).

Per Claim 18:

The Fortin patent discloses:

- wherein original function is embedded in the instrumented executable file, and wherein the saving and the invoking is performed by the original function (column 6, lines 46-51).

Per Claim 19:

The Fortin patent discloses:

- invoking the original function from within the user-supplied function using the threaded local storage variable (column 6, lines 56-58).

Per Claim 20:

The Fortin patent discloses:

- pushing the register that holds the "this" pointer onto the stack from the invoked original

function site when the determining indicates that the function implements a thiscall calling

convention (column 5, lines 48-51 and lines 55-57, and column 6, lines 48-58)

- swapping the return value of the invoking original function on the stack and the register

that holds the "this" pointer value on the stack when the determining indicates that the

function implements a thiscall calling convention (column 6, lines 59-67).

Per Claim 27:

The Fortin patent discloses:

- a computerized method for publishing a function ("provide a system and method for

efficiently instrumenting stripped object routines executing on a computer system" in column 3,

lines 19-21)

- adding an entry describing the function in a function lookup table in a machine-readable

executable file ("insertion of the demultiplexor entries 510. A demultiplexor entry (demux-

entry) is provided for each target routine." in column 5, lines 46-51 and lines 64-67).

Per Claim 28 (Amended):

This is a system version of the claimed method discussed above, claim 1, wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Fortin.

Per Claim 29 (Amended):

This is a system version of the claimed method discussed above (claims 1 and 2), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above, including "the original function having an identity comprising a name and a parameter prototype" (column 4, lines 62-65 and column 5, lines 64-67). Thus, accordingly, this claim is also anticipated by Fortin.

Per Claim 30 (Amended):

The Fortin patent discloses:

- a computerized system ("provide a system and method for efficiently instrumenting stripped object routines executing on a computer system" in column 3, lines 19-21)

- an executable file having a jump to an original function, the original function having an identity comprising a name and a parameter prototype ("The stored target routine first instruction is executed in the "Return to Target" section and control branches to the second instruction of the target routine 714." in column 5, lines 64-67 to column 6, lines 1-5 and lines 56-58)

- a first software component having a user-supplied function that includes a jump to the

original function ("The Entry routine saves ... and calls 706 the common Entry code that in turn

calls 708 user supplied Entry routine ... The stored target routine first instruction is executed in

the "Return to Target" section and control branches to the second instruction of the target routine

714." in column 5, lines 64-67 to column 6, lines 1-5 and lines 48-58)

- a second software component for receiving the identity of the original function, receiving

the identity of the user-supplied function, instrumenting the executable file by modifying

the executable file to invoke the identity of the user-supplied function in place of the

identity of the original function, injecting the identity of the user-supplied function into the

executable file ("The routines also allow the function of a target routine to be fully replaced such

that newly provided code will be executed instead of the base code in the routine being

monitored." in column 4, lines 62-65)

- storing the original function address in the executable file in association with the name of

the original instrumented function ("insertion of the demultiplexor entries 510. A

demultiplexor entry (demux-entry) is provided for each target routine ... The data section 602

contains the addresses at which the target routine and the target routine's symbolic name reside"

in column 5, lines 46-51 and lines 64-67).

Per Claim 31 (Amended):

The Fortin patent discloses:

- a computerized system ("provide a system and method for efficiently instrumenting stripped object routines executing on a computer system" in column 3, lines 19-21)

- a first module of machine-readable code comprising a call to an original function, the call being directed to a user-supplied function ("The Call to Target still points to address 202. After 202, however, control is passed to Entry Routine 210. Entry Routine 210 collects the information desired by the monitor and returns control to the target routine." in column 4, lines 47-51)

- a first data structure associating the identity of the original function with the location of the original function ("A demultiplexor entry (demux-entry) is provided for each target routine ... The data section 602 contains the addresses at which the target routine and the target routine's symbolic name reside" in column 5, lines 46-51 and lines 64-67)

- a second module comprising the user-supplied function, linked to the first module and a jump to the original function, injecting the user-supplied function into the machine-readable code ("The stored target routine first instruction is executed in the 'Return to Target' section and control branches to the second instruction of the target routine 714." in column 6, lines 56-58).

Per Claim 32:

The Fortin patent discloses:

- the first data structure comprises a function lookup table readily available for verifying that the threaded local storage variable contains the correct original instrumented function address (column 5, lines 64-67 to column 6, lines 1-5)

- the second module comprises a dynamic linked library (column 5, lines 20-24).

Per Claim 33:

The Fortin patent discloses:

- a second data structure associating the location of the first data structure with the location of the first module (column 5, lines 47-51 and lines 55-67).

Per Claim 34:

The Fortin patent discloses:

- a third module of machine-readable code comprising a second instrumented function call to a second replacement function (column 4, lines 47-51 and column 5, lines 48-49, one or more instrumented functions)

- a second data structure associating the identity of the second instrumented function with the location of the second instrumented function (column 5, lines 55-67)

- a fourth module comprising the second replacement function, having a jump to the second original function (column 6, lines 56-58).

Per Claim 35:

The Fortin patent discloses:

- a third module of machine-readable code comprising a second instrumented function jump to a second replacement function (column 6, lines 59-67 and column 5, lines 48-49, one or more instrumented functions)

- a second data structure associating the identity of the second instrumented function with the location of the second instrumented function (column 5, lines 55-67)

- the second module further comprises the second replacement function, having a jump to the second original function (column 6, lines 56-58).

Per Claim 36 (Amended):

This is a computer-readable medium version of the claimed method discussed above,

claim 1, wherein all claim limitations also have been addressed and/or covered in cited areas as

set forth above. Thus, accordingly, this claim is also anticipated by Fortin.

Per Claim 37:

This is a computer-readable medium version of the claimed system discussed above

(claims 31 and 33), wherein all claim limitations also have been addressed and/or covered in

cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Fortin.

Per Claims 38-39:

This is a computer-readable medium version of the claimed system discussed above

(claims 31-32, respectively), wherein all claim limitations also have been addressed and/or

covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by

Fortin.

Per Claim 40:

This is a computer-readable medium version of the claimed system discussed above,

claim 32, wherein all claim limitations also have been addressed and/or covered in cited areas as

set forth above. Thus, accordingly, this claim is also anticipated by Fortin.

Per Claims 41 (Amended) & 43:

These are another versions of the claimed method discussed above, claim 1, wherein all

claim limitations also have been addressed and/or covered in cited areas as set forth above,

including "replacing the access to the original function with an access to a user-supplied

function" (column 4, lines 46-51). Thus, accordingly, these claims are also anticipated by Fortin.

Per Claim 42:

This is another version of the claimed method discussed above, claim 2, wherein all claim

limitations also have been addressed and/or covered in cited areas as set forth above. Thus,

accordingly, this claim is also anticipated by Fortin.

Per Claim 44:

The Fortin patent discloses:

- wherein replacing the access to the original function with the access to the user-supplied

function is performed by modifying set points stored in a computer-readable medium

separate from the executable file (column 4, lines 54-65).

Per Claim 45:

The Fortin patent discloses:

- wherein retaining access information associated with the original function includes saving

the address of the original function (column 6, lines 1-5).

Per Claim 46:

The Fortin patent discloses:

- wherein retaining access information associated with the original function includes

associating the name of the original function with the address of original function using a

function lookup table (column 5, lines 46-51 and lines 64-67).

Per Claim 47:

The Fortin patent discloses:

- further comprising invoking the original function using the function lookup table (column

5, lines 46-51 and lines 64-67).

Claim Rejections - 35 USC § 103

13.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

14.   Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fortin

(U.S. 5,528,753).

Per Claim 3:

The rejection of claim 1 is incorporated, and Fortin further teaches that the user-supplied function is in a library (column 5, lines 20-24). Fortin does not explicitly teach that the user-supplied function is in a dynamic link library. Official Notice is taken that it was a common practice to have functions in a dynamic link library.

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Fortin to include that the user-supplied function is in a dynamic link library using the teaching of common practice. The modification would be obvious because one of ordinary skill in the art would be motivated to modify functions without recompiling the program.

Per Claim 17:

The rejection of claim 15 is incorporated, and Fortin teaches that the saving and the invoking are performed by the original function, and the original function being located in the instrumented executable file (column 6, lines 44-51). Fortin does not explicitly teach that the original function is in a dynamic link library and a stub function of the original function being located in the instrumented executable file. Official Notice is taken that it was a common practice to include a function in a dynamic link library at the time the instant invention was made.

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Fortin to include a function in a dynamic link library using the teaching of common practice. The modification would be obvious

because one of ordinary skill in the art would be motivated to eliminate recompilation of a file,

save memory space, and one would also want to provide the ease of modifying functions.

15.   Claims 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fortin (U.S.

5,528,753), and further in view of Peek (U.S. 5,481,706).

Per Claims 21 & 22 (Amended):

Fortin teaches a computerized method for instrumenting an original function in an

executable file for testing by callers of the original function ("provide a system and method for

efficiently instrumenting stripped object routines executing on a computer system" in column 3,

lines 19-21), the original function comprises an instruction that saves the addresss of the original

function to a threaded local storage variable ("The 'Return to Target Routine' section 604

contains the 'saved' first instruction of the target routine and direct branch to the address of the

second instruction of the target routine." in column 6, lines 1-5), replaces an access to the

original function with an access to the user-supplied function, injecting the user-supplied

function into the executable file ("Processing begins with a call to the target routine 702. This

call will encounter the branch first instruction and immediately branch to the Entry section 704

... that in turn calls 708 user supplied Entry routine" in column 6, lines 46-51), adding an entry

in a function lookup table of the original function ("insertion of the demultiplexor entries 510. A

demultiplexor entry (demux-entry) is provided for each target routine." in column 5, lines 46-51

and lines 64-67), determining if the prototype of the original function is correctly specified and

indicating an error when the determining indicates an incorrectly specified prototype of the

original function ("The routines also allow the function of a target routine to be fully replaced

such that newly provided code will be executed instead of the base code in the routine being

monitored." in column 4, lines 62-65, inherently determining prototype). Fortin does not

explicitly teach an imported function, a stub function for the imported function, and adding a

wrapper of the imported function to an import data block. Official Notice is taken that it was a

common practice to include a stub function for an imported function at the time the instant

invention was made. Peek teaches adding a wrapper of a function to a data block ("providing a

"wrapper" for the particular function ... a wrapper will be seen to be an individual piece of code

placed around a corresponding individual function call or routine" in column 6, lines 34-37 and

43-50).

It would have been obvious to one having ordinary skill in the computer art at the time of

the invention was made to modify the method disclosed by Fortin to include a stub function for

an imported function and adding a wrapper of the imported function to an import data block

using the teaching of common practice and Peek. The modification would be obvious because

one of ordinary skill in the art would be motivated to eliminate recompilation of a file and to

encapsulate data.

Per Claims 23 (Amended) & 24-25:

Fortin teaches a computerized method for instrumenting an original function in an

executable file for testing by callers of the original function ("provide a system and method for

efficiently instrumenting stripped object routines executing on a computer system" in column 3,

lines 19-21), modifying the original function to invoke a user-supplied function in place of the

original function, injecting the user-supplied function into the executable file ("The Call to

Target still points to address 202. After 202, however, control is passed to Entry Routine 210.

Entry Routine 210 collects the information desired by the monitor and returns control to the

target routine." in column 4, lines 46-51), adding an entry in a function lookup table of the

address of the original function ("insertion of the demultiplexor entries 510. A demultiplexor

entry (demux-entry) is provided for each target routine." in column 5, lines 46-51 and lines 64-

67), redirecting is accomplished by an instruction that causes a jump to the user-supplied

function ("Processing begins with a call to the target routine 702. This call will encounter the

branch first instruction and immediately branch to the Entry section 704 ... that in turn calls 708

user supplied Entry routine" in column 6, lines 46-51), determining whether the prototype of the

original function is correctly specified, and indicating an error when the determining whether the

prototype of the original function is correctly specified indicates an incorrectly specified

prototype of the original function ("The routines also allow the function of a target routine to be

fully replaced such that newly provided code will be executed instead of the base code in the

routine being monitored." in column 4, lines 62-65, inherently determining prototype). Fortin

does not explicitly teach an embedded function and modifying an embedded function using a

wrapper. Official Notice is taken that it was a common practice to include an embedded function

at the time the instant invention was made. Peek teaches modifying a function using a wrapper

("providing a "wrapper" for the particular function ... a wrapper will be seen to be an individual

piece of code placed around a corresponding individual function call or routine" in column 6,

lines 34-37 and 43-50).

It would have been obvious to one having ordinary skill in the computer art at the time of

the invention was made to modify the method disclosed by Fortin to include an embedded

function and modifying an embedded function using a wrapper using the teaching of common

practice and Peek. The modification would be obvious because one of ordinary skill in the art

would be motivated to encapsulate functions.

Per Claim 26:

Fortin further teaches that the function lookup table is in the executable file (column 5,

lines 46-51).

Response to Arguments

16.   Applicant's arguments with respect to claims 1-26, 28-33, 36 and 41-47 have been fully

considered but they are not persuasive.

In the remarks, the applicant argues that:

a)   The Office Action rejected independent Claim 1 by citing a procedure described in Fortin

for monitoring a routine. Claim 1, as amended, teaches "modifying an executable file to invoke a

user-supplied function in place of an original function, the user-supplied function injecting a

fault into the executable file...." The method taught by Claim 1 is significantly different from the

procedure in Fortin cited by the Office Action.

The procedure in Fortin is directed to the sequential execution of a target routine, an entry

routine, and an exit routine when the target routine is called such that the entry and exit routines

collect information about the target routine. Fortin does not disclose anything about a

"user-supplied function injecting a fault into the executable file" as recited in Claim 1.
Applicants respectfully submit that the rejection of Claim 1 is overcome and request that the
rejection be withdrawn.

Claims 15, 21, 23, 28-31, 36 and 41, as amended, include limitations substantially similar
(albeit different in other important ways) to the limitations claimed in the currently amended
Claim 1. As discussed above, Claim 1 is allowable. Thus, Claims 15, 21, 23, 28-31,
36 and 41 are allowable for at least the sane reasons that Claim 1 is allowable, and notice to that
effect is solicited. Furthermore, Dependent Claims 2-14, 16-20, 22, 24-26, 32, 33 and 42-47 are
allowable for at least the same reasons that the base claims on which they rely are allowable, and
notice to that effect is solicited.

Examiner's response:

a)   Examiner strongly disagrees with applicant's assertion that Fortin fails to disclose the
claimed limitations recited in amended claim 1. Fortin clearly shows each and every limitation
in amended claim 1. See the rejection under 35 U.S.C. 112, first paragraph, as failing to comply
with the written description requirement to claims 1-26, 28-33, 36 and 41-47 above in paragraph
10. The limitation "the user-supplied function injecting a fault into the executable file" is
interpreted as "injecting the user-supplied function into the executable file". Fortin teaches this
limitation as interpreted in column 4, lines 46-51. In addition, see the rejection above in
paragraphs 12, 14 and 15 for rejection to claims 1-26, 28-33, 36 and 41-47.

Conclusion

17.   Any inquiry concerning this communication from the examiner should be directed to

Qamrun Nahar whose telephone number is (703) 305-7699. The examiner can normally be

reached on Mondays through Thursdays from 9:00 AM to 6:30 PM. The examiner can also be

reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kakali Chaki, can be reached on (703) 305-9662. The fax phone number for the

organization where this application or processing is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

QN
December 31, 2003

KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100